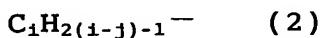


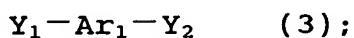
CLAIMS

1. A polymer emitting fluorescence in the solid state, having a polystyrene-reduced weight-average molecular weight of 10^3 to 10^8 and having a repeating unit selected from the group consisting of arylene group, divalent heterocyclic group and divalent aromatic amine group, wherein the polymer has an unsaturated hydrocarbon group free of aromatic ring at least at one terminal end of the main chain thereof with being directly coupled with any of the repeating units.
2. A polymer according to Claim 1, wherein the unsaturated hydrocarbon group free of aromatic ring is a group represented by formula (2) and being free of aromatic ring:



wherein, i is an integer of 5 or more, and j is an integer satisfying the range of $0 \leq j < i/2$.

3. A polymer according to Claim 2, wherein i is 8 and j is any one of 0, 1 or 2 in formula (2).
4. A polymer according to any one of Claims 1 to 3, wherein the unsaturated hydrocarbon group free of aromatic ring is cyclooctadienyl group.
5. A method for producing the polymer according to any one of Claims 1 to 4, wherein at least one monomer selected from the group consisting of the following formula (3), (4) and (5) is subjected to reaction with a compound represented by the following formula (6):



$Y_5-Ar_3-Y_6$ (5); and

E_1-Y_7 (6);

wherein Ar_1 , Ar_2 and Ar_3 each independently represents arylene group, divalent heterocyclic group and divalent aromatic amine group; E_1 represents an unsaturated hydrocarbon group free of aromatic ring; Y_1 , Y_2 , Y_3 , Y_4 , Y_5 and Y_6 each independently represents a leaving group; and Y_7 represents a hydrogen atom or a leaving group.

6. A method for producing the polymer according to Claim 5, wherein a monomer of which Y_1 , Y_2 , Y_3 , Y_4 , Y_5 and Y_6 is each independently a halogen atom, an alkylsulfonyloxy group or an arylsulfonyloxy group, and Y_7 is a hydrogen atom, a halogen atom, an alkylsulfonyloxy group or an arylsulfonyloxy group, is subjected to reaction in the presence of $Ni(0)$ complex.

7. A method for producing the polymer according to Claim 5 or 6, wherein Y_7 is hydrogen atom and E_1 is a group containing two or more unsaturated bonds.

8. A method for producing the polymer according to Claim 7, wherein a compound represented by formula (6) is cyclooctadiene and an amount of the cyclooctadiene is 100 to 300 % by mole based on the total amount of monomers represented by formulas (3), (4) and (5).

9. A polymer produced by any one of the methods according to any one of Claims 5 to 8.

10. A polymer composition comprising a polymer having a polystyrene-reduced number-average molecular weight of 10^3 to 10^8 and emitting fluorescence in the solid state, and the

polymer according to any one of Claim 1 to 4 and Claim 9.

11. A polymer composition comprising two or more polymers according to any one of Claims 1 to 4 and Claim 9.

12. A polymer light emitting device comprising a light emitting layer disposed between an anode electrode and a cathode electrode, wherein the light emitting layer comprises the polymer according to any one of Claim 1 to 4 and Claim 9 or the polymer composition according to Claim 10 or 11.

13. A flat light source comprising the polymer light emitting device according to Claim 12.

14. A segment display comprising the polymer light emitting device according to Claim 12.

15. A dot matrix display comprising the polymer light emitting device according to Claim 12.

16. A liquid crystal display comprising a backlight composed of the polymer light emitting device according to Claim 12.